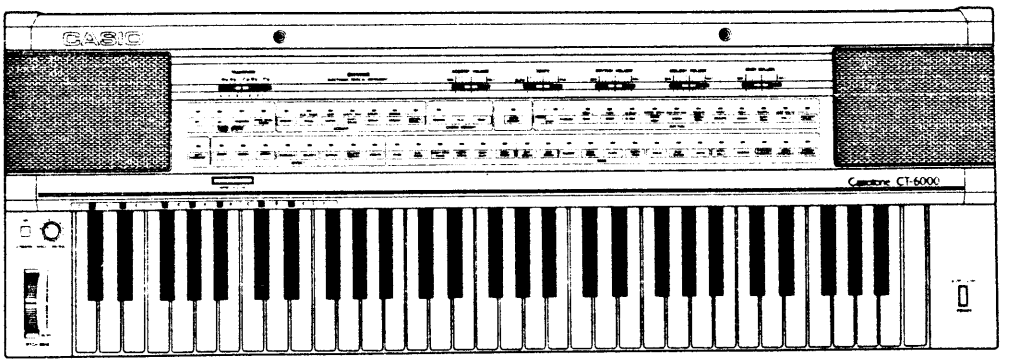
Casiotone CT-6000

Operation Manual..... 1
Manual de Operación....37



英西

CASIO

Casiotone CT-6000
ELECTRONIC MUSICAL INSTRUMENT

Introduction

Thank you very much for purchasing a Casiotone CT-6000.
The CT-6000 is a state-of-the-art electronic keyboard offering you keyboard touch response (initial and after-touch) which allows you to control both volume and tonal color depending on how hard you press the keys. In addition, it features the revolutionary Super Accompaniment — an epoch-making function which judges the musical expression used by the player during a performance in order to change drums, bass and backing accordingly, for realistic climaxes.
The simple body of the CT-6000, with LEDs on every user-friendly flat key for instant function recognition, houses a host of other easy-to-use features.
In order to make full use of the CT-6000's performing capability and ensure many years of playing pleasure, please read this instruction manual carefully and follow the instructions for correct usage.

Casiotone

Model CT-6000 MIDI Implementation Chart

Function ...		Transmitted	Recognized	Remarks
Basic	Default	1	1-16	
Channel	Changed	×	×	
Mode	Default	Mode 1	Mode 1	Fixed to Mode 1
	Messages	×	×	
	Altered	**********		
Note Number:	True voice	36-96 **********	36-96 36-96	
Velocity	Note ON	○ 90 v=1-126	○ 9n v=1-127	6 bit resolution
	Note OFF	○ 90 v=0	○ 9n v=0, 8n v=xx	xx=don't care
After Touch	Key's	×	×	
	Ch's	○ 0-124	○ 0-127	4 bit resolution
Pitch Bender		○	○	8 bit reso, 0-12 semi
Control Change	64	○	○	Sustain Pedal
Prog Change:	True #	× **********	×	
System Exclusive		×	×	
System Common	: Song Pos	×	×	
	: Song Sel	×	×	
	: Tune	×	×	
System Real Time	: Clock	○	○	
	: Commands	○	○	start, stop
Aux Mes-sages	: Local ON/OFF	×	○	
	: All Notes OFF	×	×	
	: Active Sense	×	×	
	: Reset	×	×	
Notes		Only when the internal has started in the real time message, a clock signal is transmitted, and when a start message has been received from the external, a signal from the external clock will be received. However, after the internal clock has started, no external message will be received.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

1 Features of the CT-6000

1 The touch response system allows control of volume and tonal color depending on the speed and strength with which the keys are hit for limitless musical expressiveness. Using microcomputer circuitry, the extent of volume and timbre changes is different for each tone.

2 The Super Accompaniment function responds instantly to the expression of a performance for very musical and human buildups by the realistic accompaniment ensemble. Depending not only on the strength with which the keys are played, but also on chord progression, changes in melodic structure, etc., this function reacts to various expressive means used during a performance by altering rhythm and accompaniment patterns accordingly. The effect is almost like having a backing group made up of an individual drummer, bassist, etc.

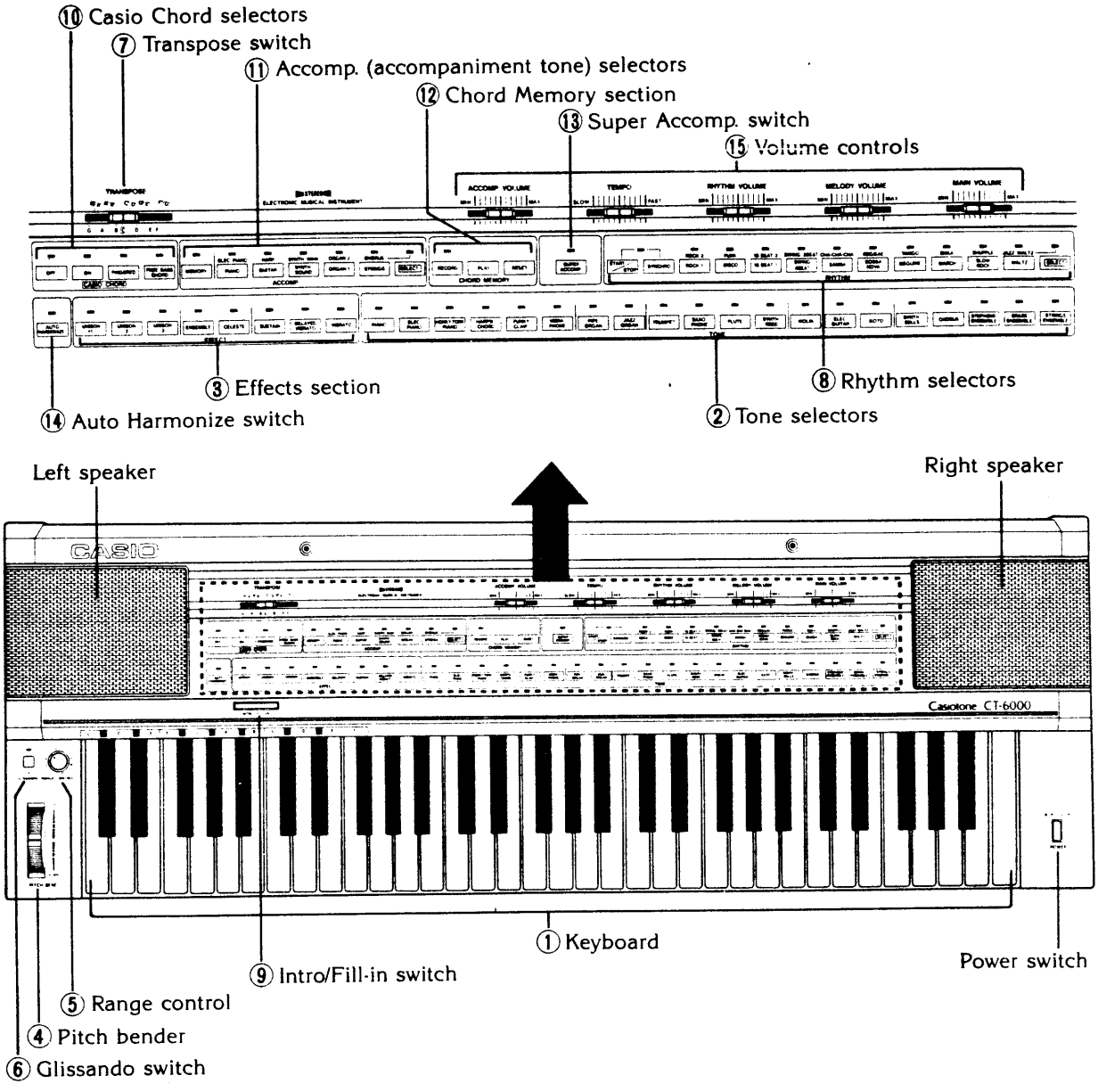
3 A pitch bender is also provided for a further increase in expressive possibilities. It allows you to alter the pitch upward or downward during performance. A range control is provided for setting the amount of possible pitch alteration to between 100 cents (one semitone) and 1200 cents (1 octave).

4 20 beautiful, natural-sounding preset tones and 8 kinds of impressive effects can be selected at the touch of a finger during performance. When automatic accompaniment is not being used, one each of the 20 preset tones and the 10 accompaniment tones can be selected for tone mixing, enabling the player to create 200 different tone colors himself (Tone Mix function).

5 20 kinds of realistic, catchy Auto Rhythms can be started or stopped at the touch of a button. As for the Auto Accompaniment function, there are 10 different accompaniment tones to choose from for plenty of variation. In addition to one-finger Casio Chord, the player can select "fingered", allowing automatic accompaniment according to the chord being pressed, or "free bass chord", which allows you to play bass phrases by yourself to an automatic backing of chords.

6 Since the CT-6000 is equipped with MIDI-terminals, it can be connected to a digital sequencer for automatic performance, or to other electronic instruments having MIDI terminals for ensemble playing. It can even be hooked up to a MIDI-compatible personal computer for data communication.

2 Name and Function of Each Part



① Keyboard
61 keys (5 octaves), 8-voice polyphonic. In order to bring out the characteristic timbre of each instrument, the pitch range of the keyboard varies according to the selected tone. When Auto Accompaniment is used during a performance, the lower 1 1/2 octaves of the keyboard become exclusive accompaniment keys.

② TONE (Tone selectors)
Allow you to select the tone of your choice at the touch of a finger from among the 20 preset tones.

③ EFFECT (Effects section)
This section provides 8 different kinds of effects which bring out the individual characteristics of the tones to the full and makes your performance even more impressive.

④ PITCH BEND (Pitch bender)
By rotating this wheel upward or downward, the pitch can be changed upward or downward during performance.

⑤ RANGE CONTROL
This control sets the range of the pitch bend effect between one semitone (100 cents) and 1 octave (1200 cents).

⑥ GLISSANDO (Glissando switch)
When set to ON, pitch bend is performed in semitone steps for a glissando effect. When it is turned OFF, the effect is that of portamento — a continuous pitch bend.

⑦ TRANSPOSE (Transpose switch)
By sliding this switch to the left or right, the pitch of the keyboard is transposed in semitone steps in a range from **G** to **F♯/G♭**.

⑧ RHYTHM (Rhythm selectors)
These let you select the rhythm of your choice at the touch of a finger. Pressing the [START/STOP] button alternately starts and stops the rhythm, while pressing [SYNCHRO] enables you to play with the rhythm starting in synchronization.

⑨ INTRO./FILL-IN (Introduction/Fill-in switch)
This button is pressed when you want to start an Auto Rhythm with an introduction or insert a fill-in during play.

⑩ CASIO CHORD (Casio Chord selectors)
These selectors determine the Auto Accompaniment mode.

- [OFF] ..... Used when you want to play without Auto Accompaniment.
- [ON] ..... Used when you want to use the Casio Chord function, i.e. one-finger Auto Accompaniment.
- [FINGERED] ..... Used for Auto Accompaniment when you want to determine the chords by pressing them yourself.
- [FREE BASS CHORD] ..... This setting allows you to play the bass line yourself manually to Auto Accompaniment.

⑪ ACCOMP. (Accompaniment tone selectors)
Let's you select the accompaniment tone of your choice at the touch of a finger.

⑫ CHORD MEMORY (Chord Memory section)
With this feature, you can memorize an accompaniment in real time, as you play it.

- [RECORD] ..... Press this button when you want to memorize.
- [PLAY] ..... Press this button when you want to start memorization, or begin playback of the memorized accompaniment.
- [RESET] ..... Press this button when you want to stop memorization or playback of the memory contents.

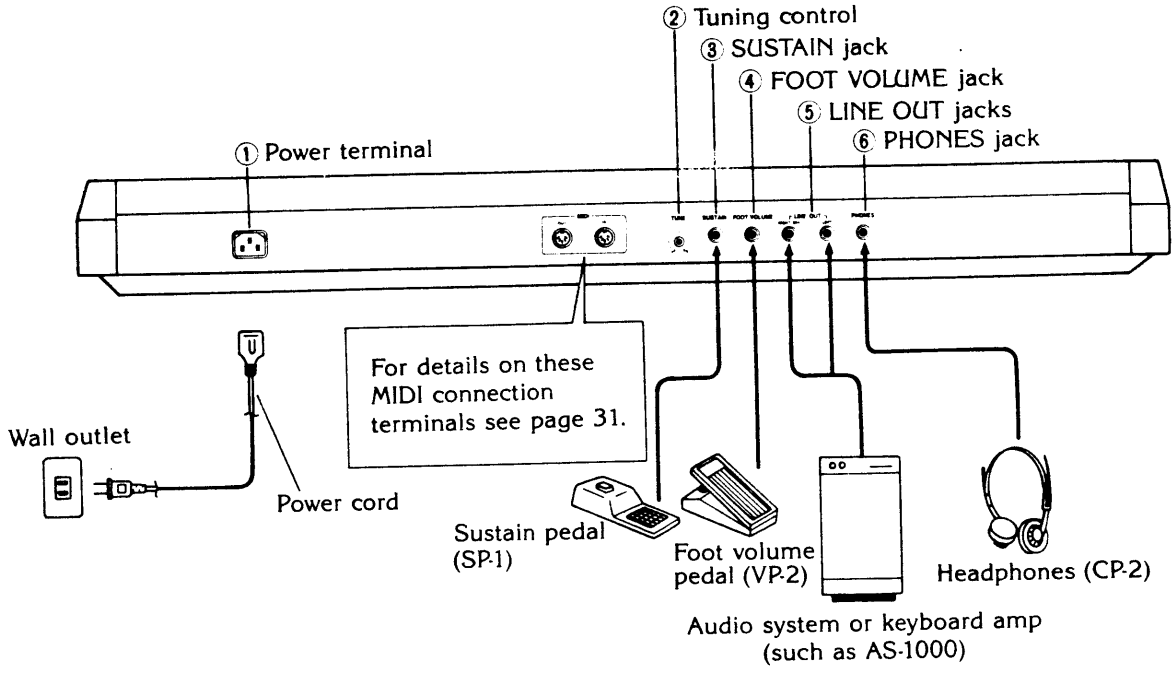
⑬ SUPER ACCOMP. (Super Accompaniment switch)
If you turn this switch ON when performing with Auto Accompaniment, the Super Accompaniment function starts to work, altering the accompaniment patterns according to the changes in expression during play.

⑭ AUTO HARMONIZE (Auto Harmonize switch)
Turning this switch ON when performing with Auto Accompaniment causes the appropriate chords to sound in harmony with the melody being played with the right hand. The type of chord is determined by the keys being pressed with the left hand on the accompaniment keyboard.

⑮ VOLUME (Volume controls)

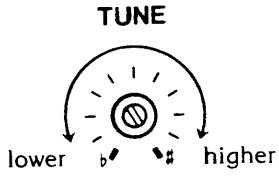
ACCOMP. VOLUME	Regulates the volume of the accompaniment.
TEMPO	Controls the tempo (speed) of the rhythm.
RHYTHM VOLUME	Adjusts the volume of the rhythm sound.
MELODY VOLUME	Adjusts the volume of the melody.
MAIN VOLUME	Adjusts the volume of the whole keyboard.

3 Connection to External Equipment (Rear Panel)



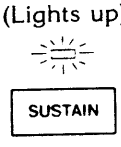
① Power terminal
For connecting the supplied AC power cord.

② Tuning control
Used for adjusting the pitch of the whole keyboard upward or downward by up to a quarter tone (±50 cents). It is thus easily possible to tune the CT-6000 to match other instruments.



③ SUSTAIN jack
Connecting the optional sustain pedal SP-1 to this jack lets you obtain a sustain effect, causing decaying sounds to be held (similar to the effect of a piano's damper pedal).

* When the sustain pedal is depressed, the SUSTAIN indicator in the effects section will light up. Please note that the sustain pedal effect has priority over the SUSTAIN switch effect.



④ FOOT VOLUME jack
By connecting the optional foot volume pedal VP-2 to this jack, it is possible to regulate volume during performance with your foot.

⑤ LINE OUT (output) jacks (RIGHT/MIX, LEFT)

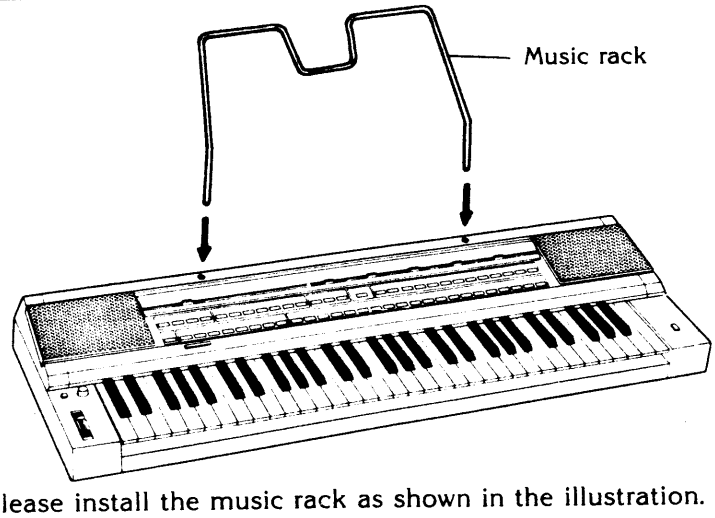
If you connect your CT-6000 to your home audio system or to a keyboard amplifier (such as the optional AS-1000), you can enjoy playing at more impressive volumes. In such a case, volume can also be regulated using the main volume control on the instrument itself as well as with the foot volume pedal. The various kinds of outputs obtainable are listed in the table below.

Output \ Connection	RIGHT/MIX	LEFT
Independent output	Monaural plug	Monaural plug
MIX output	Monaural plug	
STEREO output		Stereo plug

* When turning the CT-6000's power ON or OFF after having made such connections, please set the volume on your audio system or the keyboard amplifier to "minimum". Also please be sure to read the owner's manuals of the equipment to be connected.

⑥ PHONES (headphone) jack

When the optional headphones CP-2 are connected, the left and right speakers are automatically disconnected, so you can enjoy playing even at night without having to worry about disturbing others.



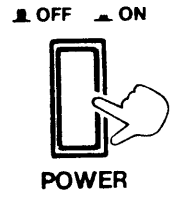
★ Please install the music rack as shown in the illustration.

4 First, Let's Create Some Sounds!

① Turn ON the power.

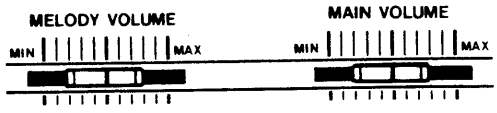
- Connect the supplied power cord to the AC power terminal on the rear panel and plug the other end into a wall outlet.
- Set the power switch on the right to ON.

→ When power is turned on, the three LED-indicators CASIO CHORD [OFF], [PIANO] (TONE) and [ROCK] (RHYTHM) light up.



② Adjust the volume.

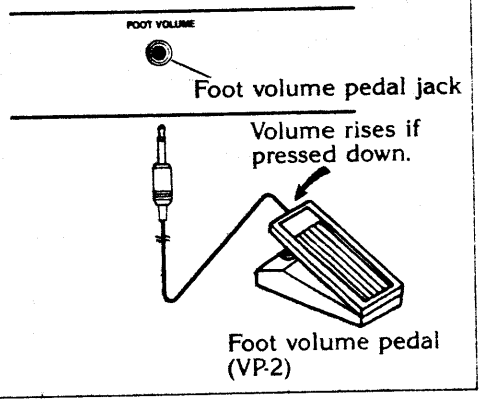
- The volume of the melody sound is regulated by the MELODY VOLUME slide control in proportion to the level set with the MAIN VOLUME slide control.



③ Well, let's play something.

Connecting the optional foot volume pedal VP-2 allows you to make fine volume adjustments while playing.

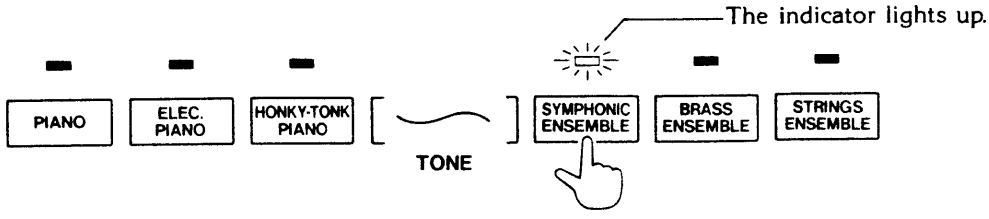
* If the volume controls on the instrument itself are set very low, volume level will not rise even if the foot volume pedal is pressed down. On the other hand, you will also not be able to raise volume using the volume controls on the instrument if the foot volume pedal is not pressed.



5 Tones/Effects

The CT-6000 is equipped with 20 preset tones and 8 kinds of effects, which can be selected at the touch of a finger.

- **Tones** ..... The indicator above the button corresponding to the selected tone lights up. (When power is turned on, PIANO is automatically selected.)
  *Depending on the tone, a preset effect (see p.12) indicator may also light up.



< Tone and Pitch Range >

► Table of Tones

In order to bring out the characteristic timbre of each of the 20 instrument tones preset on the CT-6000, the pitch range of the keyboard as well as the envelope vary according to the selected tone.

Tone Name	Pitch Range	Envelope
PIANO	A	
ELEC. PIANO	A	
HONKY-TONK PIANO	A	
HARPSICHORD	A	
FUNKY CLAVI	B	
VIBRAPHONE	A	
PIPE ORGAN	B	○
JAZZ ORGAN*	B	○
TRUMPET	A	○
SAXOPHONE	A	○

Tone Name	Pitch Range	Envelope
FLUTE	A	○
SYNTH. REED	A	○
VIOLIN	A	○
ELEC. GUITAR	B	
KOTO	A	
SYNTH. BELLS	B	○
CHORUS	A	○
SYMPHONIC ENSEMBLE	B	○
BRASS ENSEMBLE	B	○
STRINGS ENSEMBLE	A	○

< How to Use this Table >

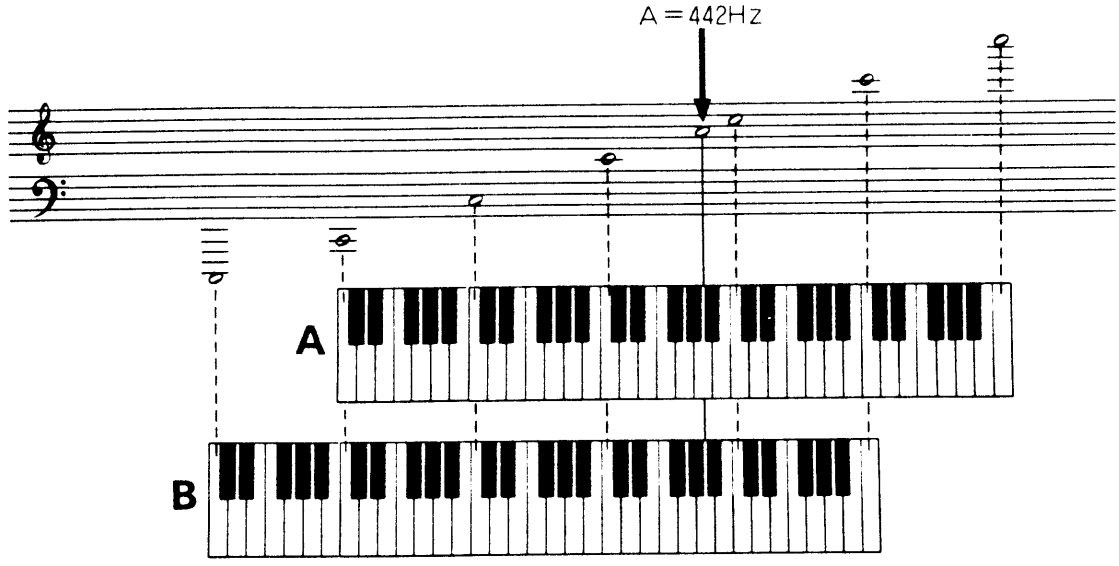
Pitch Range ..... This shows the pitch range using symbols (A — B) corresponding to those on the following "Pitch Range Chart". The symbols indicate the auditory pitch range.
*Since the tone SYNTH. BELLS has a complicated harmonic structure, it is difficult to precisely locate its pitch range.

Envelope ..... ○ mark = continuous sound.
This kind of sound continues as long as the key are pressed.
Not marked = decaying sound.
This kind of sound fades away even when the keys are kept pressed.

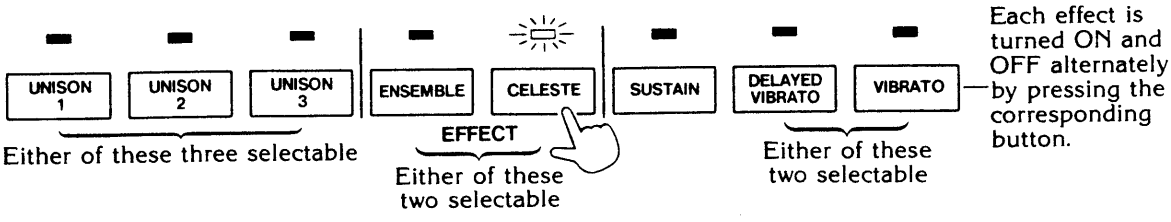
*Both the volume and the tonal color of the sound change according to the strength with which the keys are hit. (See p. 20 for more information on "Touch Response".)

*The tone for Jazz Organ differs between the upper 3 and the lower 2 octaves. The lower 2 octaves have no click noise, as they are usually used for manual bass playing.

► Pitch Range Chart



- **Effects** ..... The indicator above the button of the selected effect lights up. (Immediately after power is turned ON, all these switches and their indicators are OFF.)



- UNISON 1 ~ UNISON 3 **(Unison effects)**

These buttons provide a "unison" (layered) effect for a richer sound.

UNISON 1 ..... A unison effect which layers one sound over the other with a slightly detuned pitch. When this effect is on, the keyboard becomes 4-voice polyphonic*.

UNISON 2 ..... This effect provides an even "fatter" sound than that obtained with Unison 1. The keyboard now becomes 2-voice polyphonic.

UNISON 3 ..... With this effect, the pitch of the layered sounds is detuned by one octave, a fifth or a third as opposed to the basic note. The keyboard becomes 2-voice polyphonic.

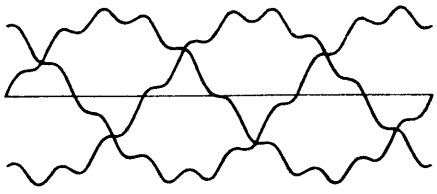
* 4-voice polyphonic means that up to four notes can be played simultaneously on the keyboard.

The CT-6000's unison effect adds further richness to a tone when playing a solo melody. It is particularly effective when using automatic accompaniment.
The composition of sounds produced with Unison 3 varies according to the selected tone in order to adapt this effect to the individual "image" and timbre of each instrument. Some sounds with accentuated thirds and fifths are somewhat difficult to use when playing by ear. In other cases, the effect is not very noticable in the lower pitch range.

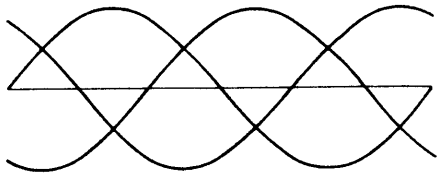
● ENSEMBLE CELESTE **(Ensemble and Celeste effects)**

The CELESTE effect gives a "spacy" feeling to various tones. ENSEMBLE gives a similar effect, with the additional impression of many instruments playing together (in an ensemble).

*** ENSEMBLE effect wave form**



*** CELESTE effect wave form**



● SUSTAIN **(Sustain effect)**

This function causes the sound to linger (be sustained) even after you have removed your fingers from the keyboard.

● DELAYED VIBRATO VIBRATO **(Delayed and normal vibrato effects)**

Vibrato is an effect caused by rapid, regular repetitions of the same sound, giving a tremulous impression. When the DELAYED VIBRATO button is ON, vibrato becomes effective with a short delay after pressing the keys.

*The depth and speed of the vibrato effect varies according to the tone.

► Preset effects

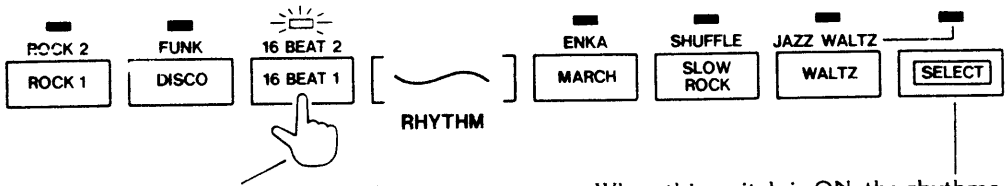
The CT-6000 automatically chooses some effects particularly suited to certain tones and turns them on when these tones are selected. Of course, it is possible to turn these effects off again. The table below shows the preset effects. (The ○-mark indicates those effects that are automatically turned on.)

TONE	ENSEMBLE	CELESTE	SUSTAIN	DELAYED VIBRATO	VIBRATO
PIANO					
ELEC. PIANO		○			
HONKY-TONK PIANO					
HARPSICHORD					
FUNKY CLAVI.					
VIBRAPHONE			○		
PIPE ORGAN					
JAZZ ORGAN	○				
TRUMPET				○	
SAXOPHONE				○	
FLUTE				○	
SYNTH. REED				○	
VIOLIN				○	
ELEC. GUITAR				○	
KOTO			○		
SYNTH. BELLS*			○		
CHORUS	○				
SYNPHONIC ENSEMBLE	○			○	
BRASS ENSEMBLE		○		○	
STRINGS ENSEMBLE	○				

*The sustain effect used with the tone "Synth. Bells" is programmed into this tone and cannot be turned off even by pressing SUSTAIN.

6 Auto Rhythm

The CT-6000 offers you a selection of 20 different Auto Rhythms to choose from at the touch of a finger.



The LED-indicator above the button corresponding to the selected rhythm lights up. (When power is turned on, [ROCK 1] is automatically selected.)

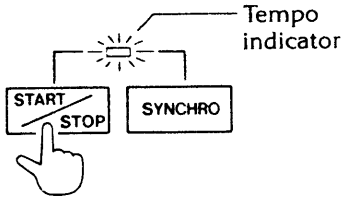
When this switch is ON, the rhythms indicated above each rhythm button can be selected. (In the example illustrated above, "16 BEAT 2" is selected when the [SELECT] switch is ON.)

1) How to Sound a Rhythm

① Push the button corresponding to the rhythm of your choice. The LED above it will light up.

② Pressing [START/STOP] causes the selected rhythm to start.

- The tempo indicator lights up in red with the first beat of each rhythm. The 2nd, 3rd and 4th beat (in the case of waltz rhythms, the 2nd and 3rd beat) are shown by the tempo indicator lighting in green.
- In order to stop the rhythm, press [START/STOP] again.



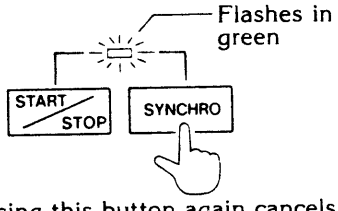
2) How to Use Synchro Start

The Synchro Start function causes the rhythm to start as soon as you hit a key.

① Push the button corresponding to the rhythm of your choice. The LED above it will light up.

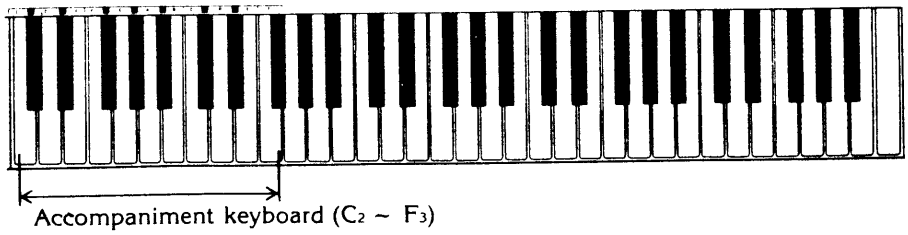
② Pressing [SYNCHRO] places the CT-6000 in Synchro Start standby mode.

- The tempo indicator flashes in green.



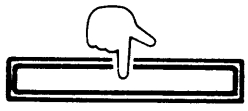
* Pressing this button again cancels Synchro Start standby mode.

③ As soon as you hit a key on the accompaniment keyboard (C_2 ~ F_3), the rhythm starts.



3) Using Intro./Fill-In

< Intro >
Pressing this button at the beginning causes normal rhythm to start after an intro pattern with a length of two measures.



< Fill-In >
Pressing the same button while a rhythm is playing inserts a fill-in pattern (rhythmic variation) into the normal rhythm. If this button is kept depressed, the fill-in continues until the end of the measure during which this button is released.

4) Break Pattern

This feature allows you to join two tunes without interrupting (stopping) the rhythm between them.

< Operation >

① Press [SYNCHRO] while the rhythm is being played.
→ The break pattern starts. The rhythm count continues even during the break.

② Using the tempo indicator as a guideline, press a key or keys on the accompaniment keyboard with correct timing. This will cause the normal rhythm pattern to start once more.

- Pressing [INTRO./FILL-IN] in Synchro Start standby mode also causes a break pattern to be played.
- Pressing [SYNCHRO] during a break enters Synchro Start standby mode, while pressing [START/STOP] stops the rhythm.

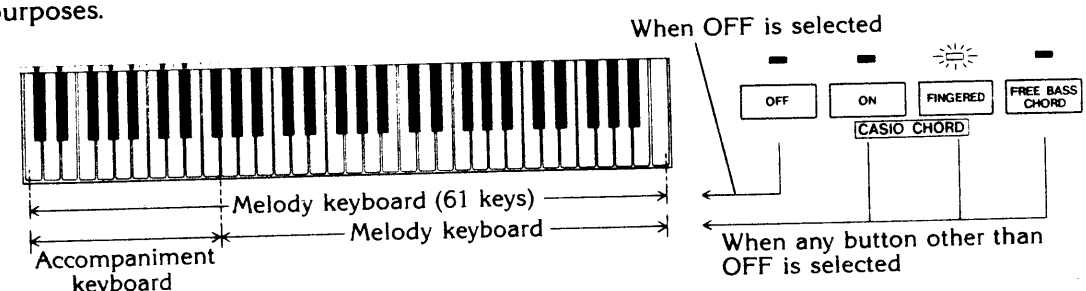
7 Auto Accompaniment

This automatic accompaniment function adds bass and chords to the Auto Rhythm. There are three types to choose from, depending on your skill and preference — One-finger, Fingered, and Free Bass Chord, which lets you play the bass line yourself on the keyboard to automatic accompaniment.

Outline of Operation

- **CASIO CHORD (Casio Chord selectors)**

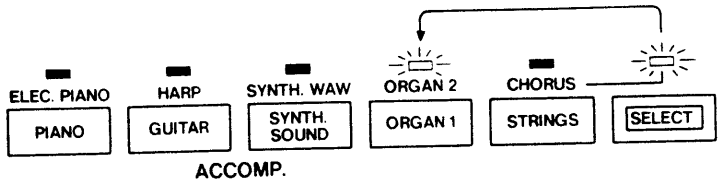
When any one of these buttons except [OFF] is selected, the lower $1^1/_2$ octaves of the keyboard (C ~ F) become an "accompaniment keyboard", used exclusively for accompaniment purposes.



* When you wish to cancel automatic accompaniment, press the OFF button. The functions of the other three buttons are alternately turned on and off (the LED-indicators light/go out) by pushing them. However, please avoid turning them off by pushing the buttons twice.

- **ACCOMP. (Accompaniment tone selectors)**

These buttons let you select the tone for the accompaniment. When [SELECT] is on, the tones indicated above the individual keys can be selected.



* In this example, "ORGAN 2" is selected.

- **MEMORY (Memory button)**

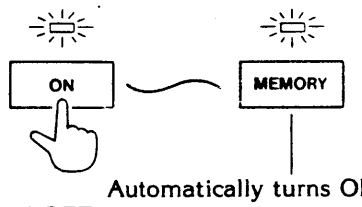
When this button is ON, the accompaniment is memorized and will continue to play even when you remove your fingers from the accompaniment keyboard until you next hit this part of the keyboard.

* The number of notes that can be played simultaneously on the whole keyboard when it is split into accompaniment and melody keyboards is 8 altogether. However, when your hands are removed from the accompaniment keyboard (i.e, when a memorized accompaniment is being played), it is possible to play up to 8 notes on the melody keyboard alone.

1) One-finger Accompaniment (Casio Chord)

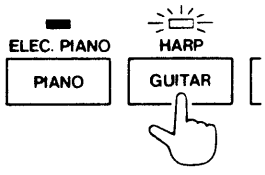
This Auto Accompaniment function lets you automatically play both bass and chords in synchronization with the rhythm using just one finger.

① Press the CASIO CHORD [ON] button.
→ The [MEMORY] button LED-indicator will automatically light up as well.

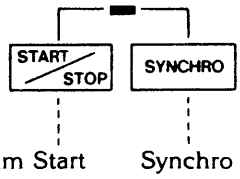


Automatically turns ON
(Alternately turns ON and OFF every time it is pressed.)

② Select the accompaniment tone.



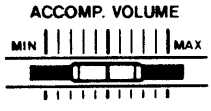
③ Start the rhythm of your choice in the Auto Rhythm section. (Of course, you may use Synchro Start if you wish.)

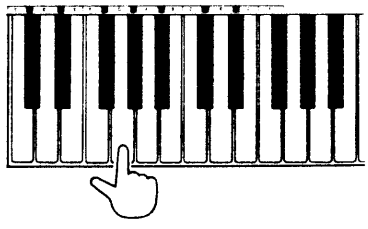


Rhythm Start Synchro Start

④ When a key on the accompaniment keyboard is pressed, major chords and an appropriate bass line will sound in time with the rhythm for automatic accompaniment.

- Adjust the level of the accompaniment sound with the ACCOMP. VOLUME slide control.

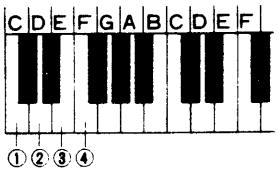




- You can individually adjust the volumes of rhythm and melody as well as the rhythm's tempo (See p. 6).

Relationship Between Keys Pressed and Type of Chord

When the Casio Chord function is [ON] , major chords are produced which have the note pressed as a root. They are automatically played in time with the rhythm together with an appropriate bass line. If you want to change the Auto Accompaniment to minor, all you have to do is press any other key on the accompaniment keyboard to the right of the root key together with it. Pressing one more key (for a total of three) under these conditions produces seventh chords, while pressing a further one for a total of four produces minor seventh chords.



Examples:

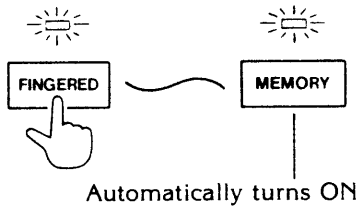
C (C major) ..... Press ①.
Cm (C minor) ..... Press ① and ② together*.
C_7 (C seventh) ..... Press ①, ② and ③ together*.
C_{m7} (C minor seventh) .... Press ①, ②, ③ and ④ together*.

* Not only ②, ③ and ④, but any keys to the right of ① on the accompaniment keyboard will produce the same effect, regardless of whether they are black or white keys.
* When the Casio Chord function is [ON] , the chords used for automatic accompaniment will be of the 4 types major (maj), minor (min), seventh (7th) or minor seventh (min 7).

2) Fingered Accompaniment

This kind of automatic accompaniment lets you create the chords yourself by pressing the corresponding keys.

① Press the CASIO CHORD [FINGERED] button.
→ The [MEMORY] button LED-indicator will automatically light up as well.

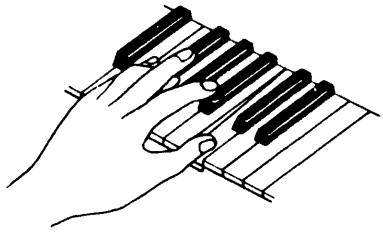


② Select the accompaniment tone.
* After step ①, [PIANO] is automatically selected.

③ Start the rhythm of your choice in the Auto Rhythm section. (You may use Synchro Start if you wish.)

④ When you press the keys on the accompaniment keyboard corresponding to the desired type of chord, the chords and an appropriate bass line will sound in time with the rhythm for automatic accompaniment.

- Adjust the level of the accompaniment sound with the ACCOMP. VOLUME slide control.
- You can individually adjust the volumes of rhythm and melody as well as the rhythm's tempo. (See p. 6.)



About the Chords Created with Fingered Accompaniment

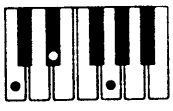
When the Casio Chord function is set to FINGERED , pressing a chord on the accompaniment keyboard causes an automatic accompaniment based on this chord and an appropriate bass line to be played.

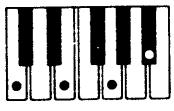
— Types of Chords Recognized by the CT-6000 —

① Major (maj)
② Minor (min)
③ Seventh (7th)
④ Minor seventh (min7th)
⑤ Major seventh (maj7th)
⑥ Minor major seventh (mM7th)
⑦ Seventh sharp five (7th♯5)
⑧ Seventh flat five (7th♭5)
⑨ Minor seventh flat five (m7th♭5)
⑩ Sus four (sus4)
⑪ Augmented (aug)
⑫ Diminished (dim)
⑬ Major sixth (maj6th)
⑭ Minor sixth (min6th)
⑮ Add ninth (add 9th)
⑯ Minor add ninth (m add 9th)
⑰ Seventh sus four (7th sus 4)

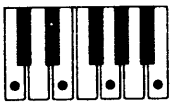
< Examples >

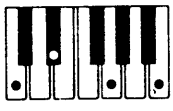
① C

②Cm


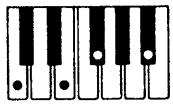
③C7


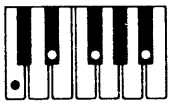
④Cm7

⑤Cmaj7 (C△7)


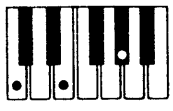
⑥CmM7


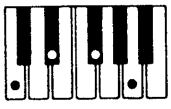
⑦C7+5 (C7♯5)

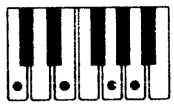
⑧C7−5 (C7♭5)


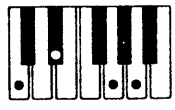
⑨Cm7−5 (Cm7♭5)


⑩Csus4

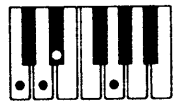
⑪Caug


⑫Cdim


⑬C6


⑭Cm6


⑮Cadd9

⑯Cmadd9


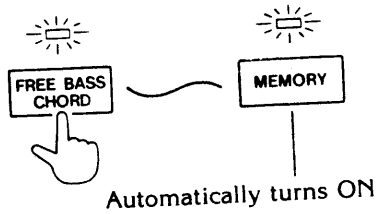
⑰C_7sus4

* The root may change with some inverted chords. For example, in the case of 7—5, inverted forms with either C or E as the lowest note are considered C7—5 chords, while inverted forms with G^b or B^b as the lowest note are considered G^b 7—5 chords.

3) Free Bass Chord Accompaniment

This function lets you play only the bass line yourself to an automatic chord backing.

① Press the CASIO CHORD [FREE BASS CHORD] button.
→ The [MEMORY] button LED-indicator will automatically light up as well.



② Select the accompaniment tone.

③ Start the rhythm of your choice in the Auto Rhythm section. (You may use Synchro Start if you wish.)

④ When you press the keys on the accompaniment keyboard corresponding to the desired type of chord, such chords are played automatically for Auto Accompaniment as with the Fingered Accompaniment function. On the other hand, playing a monophonic line lets you perform the bass part yourself.

- Adjust the level of the accompaniment sound with the ACCOMP. VOLUME slide control.
- You can individually adjust the volumes of rhythm and melody as well as the rhythm's tempo. (See p. 6.)

Examples for Use of Free Bass Chord Accompaniment

Pushing the [MEMORY] button to turn it ON and pressing a chord causes a chord backing (or, depending on the accompaniment tone, an arpeggio) to continue to be played even if you remove your fingers from the accompaniment keyboard. You can then press a new chord whenever called for by changes in the melody, while playing the bass yourself in between, as shown in the following example.

* In this example, the rhythm is set to ROCK 2 ([SELECT] ON), the accompaniment tone to [PIANO], and the [MEMORY] button to ON.

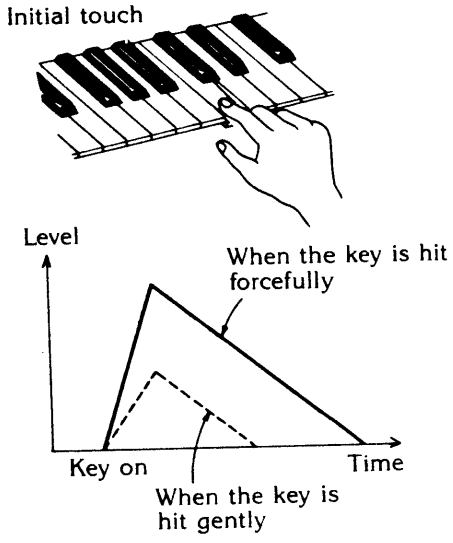
* As soon as a chord is pressed, the root of that chord also sounds as a bass note (in the above example, the first beats of the first and third measures).

8 Touch Response

The touch response system of the CT-6000 uses microprocessor circuitry to control volume and tonal color according to the strength with which the keys are pressed.
This system provides two kinds of touch response — initial touch, which judges the strength with which the keys are first hit, and after-touch, which controls the volume according to the strength with which keys are pressed further down after they have been hit.

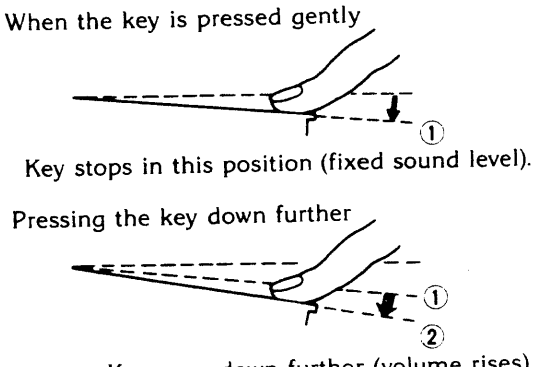
① Initial Touch

Hitting the keys forcefully produces a loud sound, while touching the keys more gently produces a softer sound. In addition, the tonal color also varies according to the strength with which keys are hit. This is called "initial touch".
Taking PIANO and other decaying sounds as an example, the release time (the time it takes for the sound to fade away) also changes depending on the strength of the key touch. (See the diagram on the right.)



② After-Touch

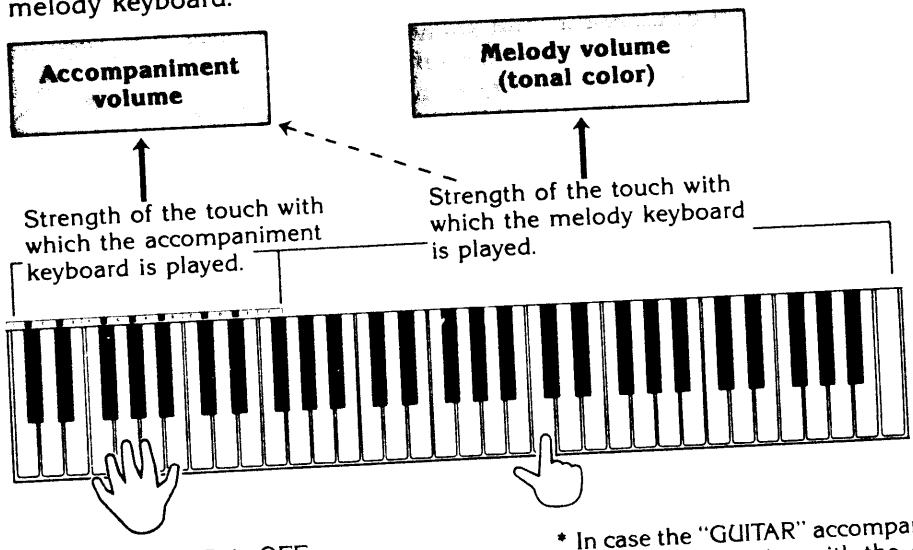
When a key that has been hit is pressed down further, the sound level increases. This is called after-touch. With TRUMPET and other continuous sounds, pressing a key gently down until it stops causes a fixed level of sound to be sustained (continue) after the initial attack and decay. (Fig.①on the right = initial touch.) If the key is then forcefully pressed down further from that position, the volume rises again. (Fig. ②on the right = after-touch.)


When the key is pressed gently
①
Key stops in this position (fixed sound level).
Pressing the key down further
①
②
Key goes down further (volume rises).

* The sound level achieved through after-touch is not influenced by the strength with which the key was originally hit for initial touch. The time it takes for maximum volume to be reached after the key has been pressed down strongly varies according to the tone for a more natural effect. All continuous tones except PIPE ORGAN and JAZZ ORGAN are provided with after-touch.

★ Touch Response During Auto Accompaniment

The touch response system of the CT-6000 also operates during Auto Accompaniment. The melody keyboard has both initial touch and after-touch functions when automatic accompaniment is used. The sound level of the accompaniment sound is determined by the strength of the initial touch with which both the melody keyboard and accompaniment keyboard are played. The degree to which the accompaniment volume is changed depends more on the accompaniment keyboard than on the melody keyboard.


Accompaniment volume
Melody volume (tonal color)
Strength of the touch with which the accompaniment keyboard is played.
Strength of the touch with which the melody keyboard is played.

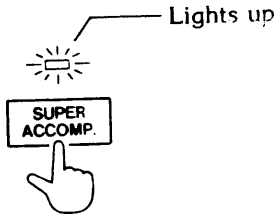
* Except when CASIO CHORD is OFF.

* In case the "GUITAR" accompaniment tone is used in conjunction with the Auto Rhythms DISCO, 16 BEAT or FUNK, the sound level of the accompaniment does not vary.

9 Super Accompaniment

One of the most advanced features offered by the CT-6000 is the Super Accompaniment function. This revolutionary system immediately responds not only to the strength of the key touch, but also to various expressive means used during a performance to change the whole accompaniment ensemble.

If the SUPER ACCOMP. button is pressed during a performance using Auto Rhythm and Auto Accompaniment, the Super Accompaniment function judges changes in the expressive means used by the player and varies the patterns of the rhythm, bass and chords accordingly for extremely musical climaxes.



The following gives an outline of the Super Accompaniment function, but we recommend that you start actually using and experiencing this wonderful feature yourself. Please try playing the 2 music examples given at the end of this manual.

Variations in the Expressive Means Used by the Player

A. Variations According to Touch Changes
- Touch (strength with which keys are hit)
- Speed (length of the shortest notes)
- Timing
- Pitch (high or low)

B. Chord Progression

Accompaniment Variations (CT-6000)

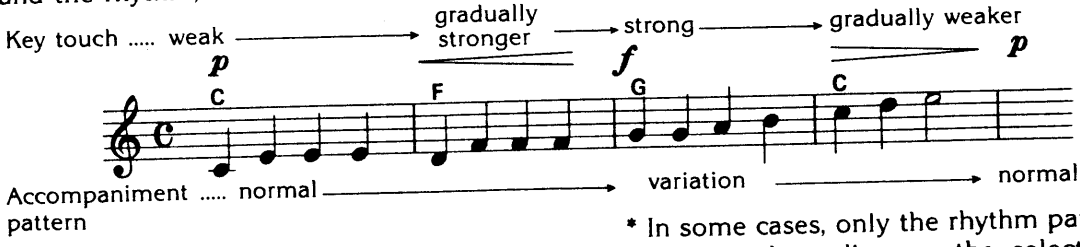
Changes in the patterns of rhythm, bass and chords.

★ Typical Super Accompaniment Examples

A. Variations According to Touch Changes

① Crescendo, Decrescendo

When the melody touch becomes stronger, the accompaniment sound level also becomes louder and the rhythm, bass and chord patterns change for a musical climax.



* In some cases, only the rhythm pattern will change, depending on the selected Auto Rhythm and accompaniment tone.

<Example>

Melody	PIANO
Accompaniment tone	PIANO
Rhythm	ROCK 2
Casio Chord	ON or FINGERED
Super Accomp.	ON

② Glissando
A fill-in is inserted if 8 or more keys are hit continuously in rising (or falling) order on the fourth beat of a rhythm (or, in the case of waltz rhythms, on the third beat).

③ Syncopation
As shown in the sample below, if you play the eighth note (♪) at the end of the measure and the key is not hit again at the beginning of the next measure, this is judged by the CT-6000 to be a syncopation, and the rhythm, chord and bass patterns are changed accordingly.

* In some cases, only the rhythm pattern will change, depending on the selected Auto Rhythm and accompaniment tone.

④ Others
Super Accompaniment also responds to a variety of other expressive means. For example, a rhythm accent is inserted when the key touch becomes strong suddenly, and the accompaniment pattern changes when the melody volume rises due to after-touch.

B. Variations According to Chord Progression

① Dominant Motion
When chord progression proceeds in the following manner from the first to the eighth measure, it is judged to be "dominant motion" and the accompaniment pattern changes.

	First measure	2 ~ 7	Eighth measure	
1	Imaj	→ II7th	→ V7th	Half cadence type
2	Imaj	→ IVmaj	→ V7th	
3	VImin	→ IImin	→ III7th	
4	VImin	→ IImin	→ V7th	
5	VImin	→ VII7th	→ III7th	
6	Imaj	→ II7th → V7th	→ Imaj	Cadence type
7	Imaj	→ IVmaj → V7th	→ Imaj	
8	VImin	→ IImin → III7th	→ VImin	
9	VImin	→ IImin → V7th	→ VImin	
10	VImin	→ VII7th → III7th	→ VImin	

(How to use this table)

- It does not matter what kind of chords are used between the beginning and end of the broken arrow line ⋯→ A full arrow line ⟶ however indicated that no other types of chords may be used in between.
- The ◯ -mark indicates where rhythm, bass and chord variations are entered, while the □ -mark indicates fill-in patterns.
- When the key is "C", the chord progression can be as follows:

Example 1: C⋯→D7 → (G7)

Example 3: Am⋯→Dm → [E7]

* In examples 6 to 10, accompaniment pattern changes are limited to cases where progression takes place from another chord to the chord used in the first measure.

② Judgement of "sus4" and "dim"

When a "sus4" chord is pressed, rhythm, bass and chord patterns change (variation) and a fill-in is inserted the next time the chord changes. When a "dim" (diminished) chord is pressed, a variation pattern is sounded the next time the chord changes.

③ Others

When chord progression proceeds as follows, the rhythm, bass and chord patterns change.

Imaj ⟶ (Imin) (maj →min) or Imin ⟶ (Imaj) (min →maj)

Imaj ⟶ (I7th) (maj →7th)

Imaj ⟶ (III♭maj) (maj → diminished maj chord with a root which has been raised by a third)

Imaj ⟶ (VI♭maj) (maj → Diminished maj chord with a root which has been raised by a sixth)

I →IV → (V) The roots of the three chords change by the intervals first, fourth and fifth.

* These three chords do not have to be major chords. (For example, the progression Cmaj7 →Fm → (G7) is also possible.)

I →VII♭ →I maj7 →VII♭

Imaj →II♭7th →Imaj7 →II♭7th

} As soon as the last chord is pressed, a break pattern is inserted in that measure. (For example C →B♭ →Cmaj7 →B♭)

* I, II, ... VII denote first, second, ... and seventh degree.

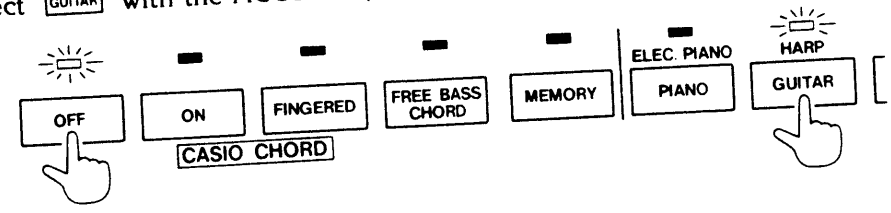
10 Tone Mix

This function lets you mix the tone selected with the TONE selectors with an accompaniment tone. By using this feature, you can create a host of variations of the 20 preset tones.

<Using Tone Mix>

(Example) Mixing piano and guitar tones for octave playing

① First, select [PIANO] with its TONE selector.
② Press the CASIO CHORD [OFF] button.
* This function has to be off when using the Tone Mix feature.
③ Select [GUITAR] with the ACCOMP. (accompaniment tone) selector.



This simple operation now lets you play a mix of the piano and guitar tones.
* You can adjust the volume of the piano sound with the MELODY VOLUME slide control, and that of the guitar sound with the ACCOMP. VOLUME slide control. In order to cancel the Tone Mix function, simply press [OFF].

★ Effective Use of the Tone Mix Function

In our above example, we combined PIANO and GUITAR, two tones having a different pitch. It is usually particularly effective to combine two contrasting sounds like this.

A. Effective Tone Combinations	B. Combination Examples (melody tone + accompaniment tone)
1) Decaying sounds and continuous sounds	STRINGS ENSEMBLE + PIANO
2) Sounds with a slow attack and sounds with a fast attack	VIOLIN + HARP
3) Sounds with a wide touch response and sounds with little touch response	VIBRAPHONE + ORGAN 1
4) Sounds using the stereo chorus effect with sounds that do not	HARPSICHORD + CHORUS

11 Auto Harmonize

When performing with automatic accompaniment, this feature adds harmony corresponding to the chord pressed on the accompaniment keyboard to the melody sound.

<Using Auto Harmonize>

① Press AUTO HARMONIZE to turn the function on and start Auto Accompaniment. (You can also turn on Auto Harmonize when Auto Accompaniment is already playing.)

② When you hit the melody keyboard, a harmony corresponding to the chord being pressed on the accompaniment keyboard will be added to the melody sound, as if the melody itself was being played with chords.

* If you change the chord you are playing with your left hand while holding down a key on the melody keyboard, the harmony of the melody (the chord heard with the melody tone) will change accordingly.

12 Chord Memory

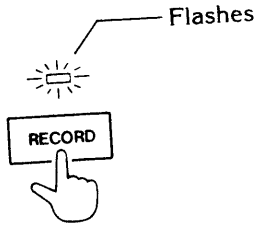
This function allows you to memorize the chords being played on the accompaniment keyboard in real time and then play them back.

<Using Chord Memory>

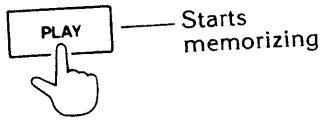
① Select either one of [ON], [FINGERED] or [FREE BASS CHORD] in the CASIO CHORD section.
- This sets your favorite kind of Auto Accompaniment mode.

② Select the Auto Rhythm of your choice.
- Set the tempo to a comfortable playing speed.

③ Press [RECORD] to ON.
→ The LED-indicator above the button starts flashing.

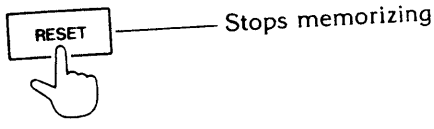


④ Pressing [PLAY] first causes one count measure to be played, after which the rhythm will start. Start memorizing the desired accompaniment by playing the accompaniment keyboard.



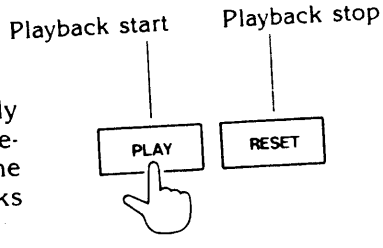
- The [RECORD] indicator stops flashing and is illuminated continuously instead.
- What you are now playing on the accompaniment keyboard is memorized in real time. (Fill-in patterns can also be memorized.)
- If you should make a mistake somewhere, press [RESET] and start again from step ③.

⑤ Pressing [RESET] stops the memorizing process.



<Playback>

Pressing [PLAY] starts playback.



- Playback is repeated endlessly until [RESET] is pressed.
- During playback, all 61 keys of the keyboard are used as a melody keyboard only. The volume of the memorized accompaniment being played back changes according to the touch with which the melody is played. (See p. 22.) Super Accompaniment also works during playback. (See p. 22.)

★ Synchro Playback

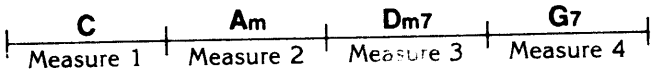
This function allows you to start playback of the memorized accompaniment in synchronization with the melody.

① Press [SYNCHRO].
② Pressing [PLAY] sets the CT-6000 to Synchro Playback standby mode.
③ Accompaniment playback starts as soon as any of the 61 keys are hit with sufficient strength.

<Some Memory Rules>

1) On Reset Timing

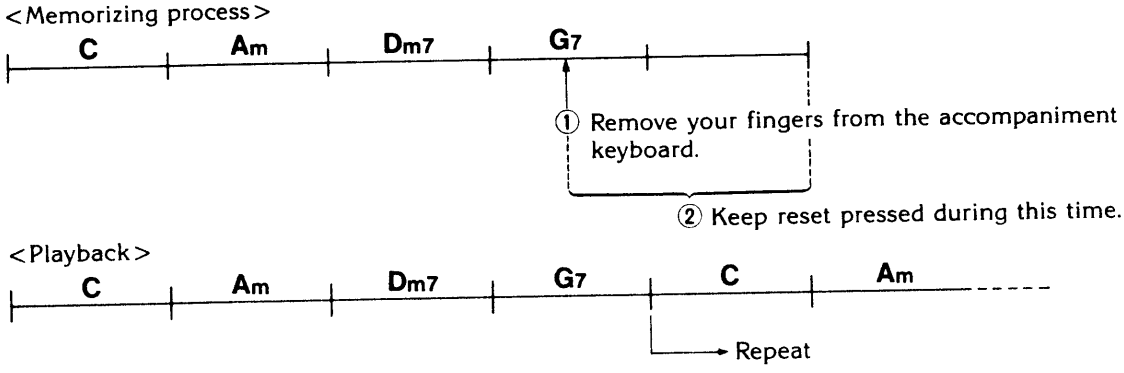
In order to use repeat playback effectively, it is very important to press RESET at the end of the memorizing process with the correct timing.



For example, in order to repeat a chord progression such as shown in the example above, it will be necessary to carefully observe the following points during the memorizing operation:

① Remove your fingers from the accompaniment keyboard until the end of measure 4 as soon as you have pressed "G7" in measure 4.

② After removing your fingers from the accompaniment keyboard, keep pressing RESET until the next measure (measure 5) is completed.



2) On Memory Contents

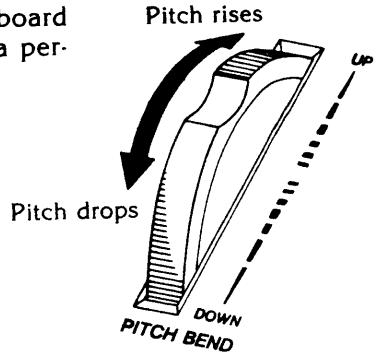
The memory is capable of holding up to a total of 400 steps (1 step = 1 note). In the case of chords consisting of 4 notes, for example, up to 100 chords can be memorized.

3) Memory Erasure

The contents of the memory are cleared when power is turned off. The previous memory contents are also cleared as soon as you start memorizing a different accompaniment.

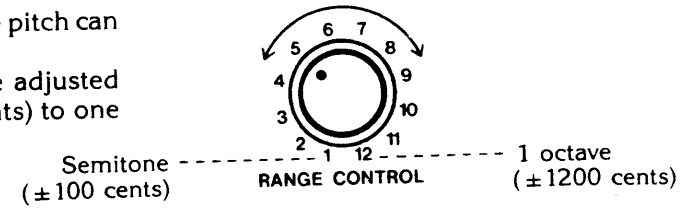
13 Pitch Bend

By rotating the PITCH BEND wheel on the left side of the keyboard up or down, you can cause the pitch to rise or fall during a performance.



① Range Control

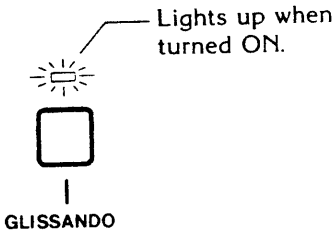
This control sets the range within which the pitch can be bent upwards or downwards.
The range of the pitch bend effect can be adjusted within the range of one semitone (100 cents) to one octave (1200 cents).



② Glissando

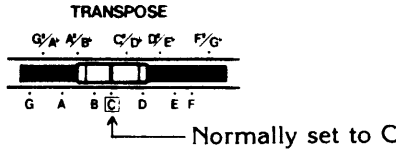
By turning the GLISSANDO switch ON, a stepped pitch bend (glissando effect) in semitone steps can be produced. When this switch is OFF, a continuous pitch bend (portamento effect) is produced instead.

* When using decaying sounds with the glissando effect, the sound will start a new every semitone step (i.e., a new attack will begin on every step).

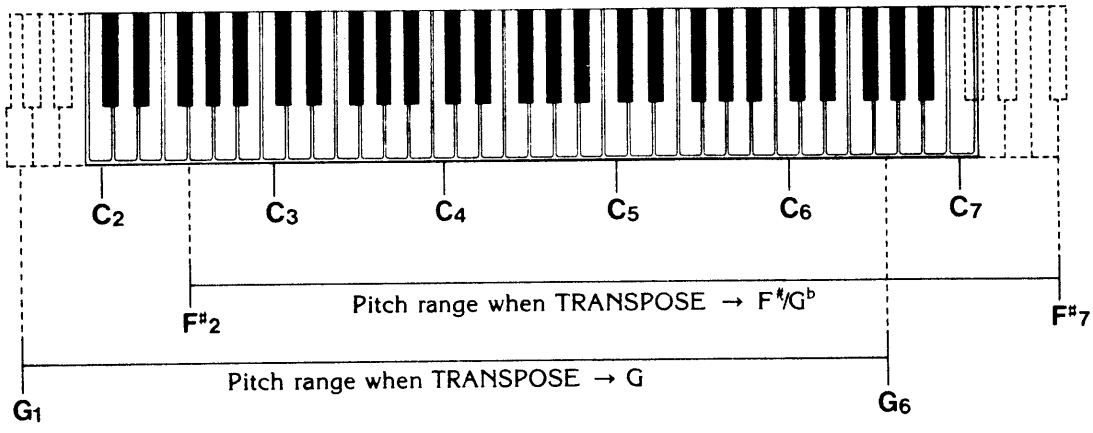


14 Transpose

By simply sliding this switch to the left or right, you can easily transpose the pitch of the whole keyboard. Adjustment is possible in semitone steps from **F♯/G♭** (highest pitch) to **G** (lowest pitch) with C at the center.



Keyboard of the CT-6000 ($C_2 \sim C_7$)



* When both the transpose function and the pitch bender are used simultaneously, or when Unison 3 is used, it will sometimes not be possible to fully raise or lower the pitch.

15 About MIDI

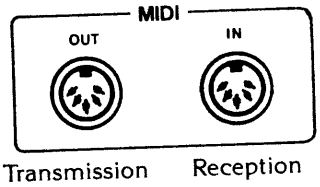
MIDI is short for "Musical Instrument Digital Interface" and signifies a type of external control terminal for electronic instruments. The MIDI standard has been adopted by a large number of instrument makers, so that it is possible to connect instruments having such terminals with each other as well as with compatible personal computers for data communication.

1) What You Can Do Using MIDI

① You can use a personal computer for automatic performances.
② You can memorize a performance on the CT-6000 with a personal computer in real time.
③ You can play the CT-6000 simultaneously with other MIDI-compatible instruments using just one keyboard by connecting them.
④ You can connect the CT-6000 to rhythm machines and other peripheral equipment and play back the CT-6000's chord memory in synchronization.
⑤ You can connect the CT-6000 to a MIDI sequencer to synchronize the sequencer with the CT-6000's rhythm.

2) Data Transmitted and Received by the CT-6000

① Pitch and length of notes
② Initial touch, after-touch
③ Pitch bend effect
④ Rhythm Start/stop and tempo
⑤ Sustain pedal effect



Transmission Reception

16 Troubleshooting

Trouble	Possible Cause	Remedy
No sound heard even if keys are pressed.	1. The MAIN VOLUME is turned down. 2. The MELODY VOLUME is turned down. 3. Headphones are connected.	1. Turn up the MAIN VOLUME to an appropriate level. 2. Turn up the MELODY VOLUME to an appropriate level. 3. Disconnect the headphones.
No rhythm heard.	The RHYTHM VOLUME is turned down.	Turn up the RHYTHM VOLUME to an appropriate level.
No accompaniment sound heard.	1. The ACCOMP. VOLUME is turned down. 2. Neither ON, FINGERED nor FREE BASS CHORD is selected in the CASIO CHORD section.	1. Turn up the ACCOMP. VOLUME to an appropriate level. 2. Select ON, FINGERED or FREE BASS CHORD. (The respective indicator will light up.)
Tone mix not possible.	1. Either the MELODY VOLUME or the ACCOMP. VOLUME is turned down. 2. OFF has not been selected in the CASIO CHORD section.	1. Turn up the MELODY VOLUME and ACCOMP. VOLUME to an appropriate level. 2. Select OFF in the CASIO CHORD section.
Pitch is not correct.	1. When using Unison 3, thirds and fifths are accentuated with some tones, making it difficult to play by ear. In some cases, the effect may also be insufficient in the lower pitch range. 2. When the transpose function and pitch bend are used together, it will sometimes not be possible to fully raise or lower the pitch.	
Occasionally, noise is heard.	Noise caused by electric refrigerators, washing machines, etc.	Use a wall socket as far away as possible from the machine which is thought to cause the noise.
No sound is heard when the instrument is connected to an external amp.	1. The MAIN VOLUME on the instrument is turned down. 2. The connection cord is damaged.	1. Turn up the MAIN VOLUME to an appropriate level. 2. Replace the connection cord.

17 Care of Your Unit

1 Avoid heat, humidity or direct sunlight.

Do not overexpose the unit to direct sunlight, place near an air conditioner, or in any extremely hot place.

2 Take care not to drop the unit and avoid strong shocks.

A strong shock may cause trouble. When carrying or transporting the unit, protect the keyboard and switches with soft materials.

3 Keep the unit free of liquids, dust, particles etc.

Do not allow bits and pieces to get between the keys, especially metallic objects such as hairpins, sewing needles or coins. Also, do not get the unit wet.

4 Never attempt to modify any parts of the unit.

The unit is a precision piece, made up of electronic parts. Any modification of, or tampering with, inner parts may cause trouble or accidents.

5 Do not use a lacquer thinner or similar chemical.

Clean the keyboard with soft cloth dampened with a mild detergent. (Soak the cloth in a detergent and squeeze until almost dry.)

6 Don't forget to turn off the power switch.

After using the unit, be sure to turn off the power switch. If the unit is left for many hours with the power switch turned on, trouble or accidents may occur. Also when not using the unit for a long period, remove the batteries to avoid corrosion from battery leakage.

7 In case of malfunction ...

When the unit does not work properly, check whether switches, connections, etc. are set correctly as indicated in the troubleshooting chart on page 32 of this manual. If the unit still doesn't work, please contact the original retailer or nearby dealer. Never attempt to repair it yourself. It may result in serious damage of components.

18 Specifications

Model:	Casiotone CT-6000
Keyboard:	61 keys 5 octaves
Chords:	Maximum of 8 notes (8-voice polyphonic)
Preset tones:	20 tones; PIANO, ELEC. PIANO, HONKY TONK PIANO, HARPSICHORD, FUNKY CLAVI, VIBRAPHONE, PIPE ORGAN, JAZZ ORGAN, TRUMPET, SAXOPHONE, FLUTE, SYNTH. REED, VIOLIN, ELEC. GUITAR, KOTO, SYNTH. BELLS, CHORUS, SYMPHONIC ENSEMBLE, BRASS ENSEMBLE, STRINGS ENSEMBLE
Effects:	UNISON 1~3, ENSEMBLE, CELESTE, SUSTAIN, DELAYED VIBRATO, VIBRATO
Auto Rhythm:	20 rhythms; ROCK 1, ROCK 2, DISCO, FUNK, 16 BEAT 1, 16 BEAT 2, SWING 4 BEAT, SWING 2 BEAT, SAMBA, CHA-CHA-CHA, BOSSA NOVA, REGGAE, BEGUIN, TANGO, MARCH, ENKA, SLOW ROCK, SHUFFLE, WALTZ, JAZZ WALTZ • Start/Stop, Synchro Start, Intro/Fill-In, Break
Auto Accompaniment functions:	ON/FINGERED/FREE BASS CHORD • Memory
Accompaniment tones:	10 tones; PIANO, ELEC. PIANO, GUITAR, HARP, SYNTH. SOUND, SYNTH. WAW, ORGAN 1, ORGAN 2, STRINGS, CHORUS
Chord memory:	Real-time memory (approx. 400 notes) • Record, Play, Reset
Transpose	Transposes in semitone steps (from G to $F^{\#}$)
Other features:	Initial-touch/after-touch, Super Accomp., Tone Mix, Auto Harmonize, Pitch Bend, (range control, glissando)
Tuning control:	±1/4 tone (±50 cents)
Speakers:	ϕ 12cm x 2 (output 7W + 7W)
Output terminals:	LINE OUT (LEFT/MIX, RIGHT) Output impedance=5KΩ (MIX=2.5KΩ) Output voltage=1.1V max. (MIX=1.7V max.) PHONES
MIDI terminals:	IN/OUT
Input terminals:	FOOT VOLUME, SUSTAIN
Power consumption:	49W
Power source:	AC100, 120, 220 or 240V, 50/60Hz
Dimensions:	980mm (width) x 340mm (depth) x 122mm (height) (including protrusions)
Weight:	14kg
Body color:	Black
Accessories:	AC power cord, music rack, dust cover

** Design and specifications are subject to change without notice.*

WARNING:
CHANGING THE VOLTAGE SELECTOR MAY REQUIRE THE USE OF A DIFFERENT LINE CORD OR ATTACHMENT PLUG, OR BOTH. TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

GUIDELINES LAID DOWN BY FCC RULES FOR USE OF THE UNIT IN THE U.S.A. (not applicable to other areas).

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

..... reorient the receiving antenna
..... relocate the computer with respect to the receiver
..... move the computer away from the receiver
..... plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.